

AMENDMENTS TO THE CLAIMS

Please amend claims 22-25 and 28-31 as indicated below.

Please cancel claims 21 and 27 without prejudice.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-20 (canceled)

Claim 21 (canceled)

Claim 22 (currently amended): The method as recited in claim 21-23, wherein the object includes at least one of a face and a finger, and wherein the data includes biometric data.

Claim 23 (currently amended): A method for detecting data of an uneven surface of an object, the method comprising:

illuminating at least one of stripes and a grid on the uneven surface using at least one light source;

detecting, without a touching contact, light reflected from the uneven surface at a plurality of discrete locations so as to create a partial image of the uneven surface at each of the plurality of discrete locations;

selectively analyzing each of the partial images; and
combining at least portions of the partial images into an overall image of the uneven surface.
The method as recited in claim 21, wherein the illuminating includes moving the at least one light source on a path around the object, and wherein the detecting at the plurality of discrete locations is performed at different points in time.

Claim 24 (currently amended): A method for detecting data of an uneven surface of an object, the method comprising:

illuminating at least one of stripes and a grid on the uneven surface using at least one light source;

detecting, without a touching contact, light reflected from the uneven surface at a plurality of discrete locations so as to create a partial image of the uneven surface at each of the plurality of discrete locations;

selectively analyzing each of the partial images; and
combining at least portions of the partial images into an overall image of the uneven surface.
The method as recited in claim 21, wherein the at least one light source includes a plurality of light sources disposed around the object in an arc-shaped configuration, wherein the illuminating includes sequentially switching on each of the plurality of light sources, and wherein the detecting is performed sequentially according to the switching.

Claim 25 (currently amended): The method as recited in claim 24, wherein the detecting is performed using a plurality of cameras and the combining into an overall image includes combining only selected illuminated areas of each of the plurality of partial images.

Claim 26 (previously presented): The method as recited in claim 24, wherein only one camera is used to create each of the partial images corresponding to each light source, and wherein respective selected areas of each of the partial images are combined into the overall image.

Claim 27 (canceled)

Claim 28 (currently amended): A method for detecting data of an uneven surface of an object, the method comprising:

illuminating at least one of stripes and a grid on the uneven surface using at least one light source;

detecting, without a touching contact, light reflected from the uneven surface at a plurality of discrete locations so as to create a partial image of the uneven surface at each of the plurality of discrete locations;

selectively analyzing each of the partial images; and
combining at least portions of the partial images into an overall image of the uneven surface
~~The method as recited in claim 27, wherein the selectively analyzing is performed using different wavelengths,~~ wherein the illuminating includes directionally illuminating with white light, wherein the detecting is performed by a camera, wherein the partial images of different wavelengths is created by color filtering single areas is performed during the detecting so as to create partial images of different wavelengths, wherein the analyzing includes selecting an area and assigning a desired location to the area, and wherein the combining includes combining at least portions of the partial image into an overall black and white image in a frame buffer.

Claim 29 (currently amended): The method as recited in claim ~~27~~ 28, wherein the illuminating is performed using light of different wavelengths.

Claim 30 (currently amended): A method for detecting data of an uneven surface of an object, the method comprising:

illuminating at least one of stripes and a grid on the uneven surface using at least one light source;

detecting, without a touching contact, light reflected from the uneven surface at a plurality of discrete locations so as to create a partial image of the uneven surface at each of the plurality of discrete locations;

selectively analyzing each of the partial images; and
combining at least portions of the partial images into an overall image of the uneven surface,
~~wherein the selectively analyzing is performed using different wavelengths~~
~~The method as recited in claim 27,~~ wherein the at least one light source includes a plurality of light sources synchronously switched on during the detecting, and wherein the detecting includes only one camera so as to create each of the partial images for each light source, and further comprising selecting an area for each of

the partial images for each lighting situation using an electronic control unit.

Claim 31 (currently amended): A method for detecting data of an uneven surface of an object, the method comprising:

illuminating at least one of stripes and a grid on the uneven surface using at least one light source;

detecting, without a touching contact, light reflected from the uneven surface at a plurality of discrete locations so as to create a partial image of the uneven surface at each of the plurality of discrete locations;

selectively analyzing each of the partial images; and

combining at least portions of the partial images into an overall image of the uneven surface. The method as recited in claim 21, wherein the object includes a finger, and wherein the detecting includes scanning the finger line by line selectively, wherein the lines are aligned parallel to an axis of the finger.

Claim 32 (previously presented): An arrangement for a touchless detection of data of an uneven surface of an object, comprising:

an imaging optical system including an electronic camera oriented perpendicular to the uneven surface;

a plurality of line-shaped light sources for illuminating the uneven surface disposed in row on each side of the electronic camera;

an analyzing unit for electronic image processing including an electronic control unit coupled to the electronic camera and configured to assign a partial image corresponding to each of the plurality of light sources and to process the partial images into an overall image.

Claim 33 (previously presented): The arrangement as recited in claim 32, wherein the object includes a finger and wherein the data includes biometric data.

Claim 34 (previously presented): The arrangement as recited in claim 32, wherein the plurality of

line-shaped light sources includes light emitting diodes.

Claim 35 (previously presented): The arrangement as recited in claim 32, wherein the electronic camera is configured to create each of the partial images for each light source, wherein the plurality of light sources are configured to be sequentially switched on, wherein the analyzing unit is configured to process only selected areas of each of the partial images, and wherein the electronic control unit is configured to read out an area of a matrix for each lighting situation and to assign the area of the matrix to a desired location on the object .

Claim 36 (previously presented): The arrangement as recited in claim 32, wherein the electronic camera is a CMOS camera.

Claim 37 (previously presented): The arrangement as recited in claim 32, further comprising a plurality of additional cameras disposed side by side in a row.

Claim 38 (previously presented): The arrangement as recited in claim 32, wherein the plurality of light sources includes a white light source oriented perpendicular to a center of the uneven surface, and further comprising a plurality of additional cameras configured to take spectrally filtered partial images disposed in a row alongside the white light source.

Claim 39 (previously presented): The arrangement as recited in claim 32, wherein the plurality of light sources include at least two light sources radiating at a same wavelength and a third light source disposed between the at least two light sources and radiating at a different wavelength.

Claim 40 (previously presented): The arrangement as recited in claim 34, wherein the light emitting diodes radiate at wavelengths in a range of about 400 nm to about 3 μ m.

Claim 41 (previously presented): The arrangement as recited in claim 34, further comprising an additional light source radiating red and disposed in the row as an illumination of reference.

Claim 42 (previously presented): The arrangement as recited in claim 41, wherein the additional light source radiates at a wavelength of at least one of 660 nm and 800 nm.